

AD-A087 317

PURDUE UNIV LAFAYETTE IN DEPT OF PSYCHOLOGICAL SCIENCES F/G 5/11  
SOCIAL INFLUENCES ON TASK SATISFACTION: MODEL COMPETENCE AND 08--ETC(U)  
JUN 80 H M WEISS, C E NOWICKI N00014-78-C-0609

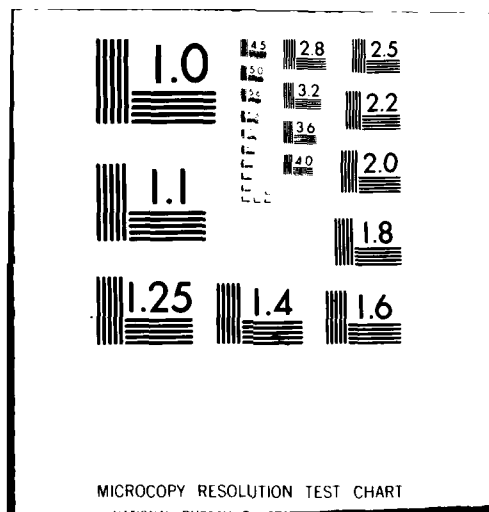
UNCLASSIFIED

NL

1 of 1  
AD-A087 317  
GPO




END  
DATE  
FILMED  
9-80  
DTIC



ADA 087317

DOC FILE COPY

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER 5	2. GOVT ACCESSION NO. AD-A087317 (9)	3. RECIPIENT'S CATALOG NUMBER
4. TITLE (and Subtitle) Social Influences on Task Satisfaction: Model Competence and Observer Field Dependence		5. TYPE OF REPORT & PERIOD COVERED Interim / rept.
7. AUTHOR(s) Howard M. Weiss and Christine E. Nowicki		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS Dept. of Psychological Sciences Purdue University West Lafayette, IN 47907		8. CONTRACT OR GRANT NUMBER(s) N00014-78-C-0609
11. CONTROLLING OFFICE NAME AND ADDRESS Organizational Effectiveness Research Programs Office of Naval Research, Arlington, VA 22217		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS NR 170-876
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE June 1980
LEVEL 14		13. NUMBER OF PAGES 40 (12) 48
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited. Reproduction in whole or in part is permitted for any purpose of the U.S. Government.		15. SECURITY CLASS. (of this report)
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
18. SUPPLEMENTARY NOTES		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Social Learning, Social Influence, Satisfaction, Attribution Theory, Field Dependence/Independence		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) Factors affecting the influence of social information on task satisfaction were studied in a laboratory setting. Specifically, the effects of a worker model's task competence and an observing worker's Field Dependence on the observer's adoption of the model's expressed task attitudes were examined with divergent prediction from Social Learning and Attribution research tested. Results showed the acceptance of social information to be an interactive function of model and observer characteristics. The task attitudes of Field Dependent subjects were influenced by the model's attitudes regardless of model compet-		

DD FORM 1 JAN 73 1473

EDITION OF 1 NOV 65 IS OBSOLETE  
S/N 0102-LF-014-6601

SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

DTIC  
EXTRACTED  
JUL 30 1980

ence. Among Field Independent subjects the Social Learning expectation of acceptance of the attitudes of competent models only was supported. Results are discussed in terms of differences in the processing of social information when job attitudes are formed.

Accession For	
NTIS GRA&I	<input checked="checked" type="checkbox"/>
DDC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/ _____	
Availability Codes	
Dist	Avail and/or special
A	

Social Influences on Task Satisfaction:  
Model Competence and Observer Field  
Dependence

Howard M. Weiss  
and  
Christine E. Nowicki

Purdue University

Prepared for  
Organizational Research Effectiveness Program  
Office of Naval Research

Contract N00014-78-C-0609  
N R 170-875

Approved for public release; distribution unlimited  
Reproduction in whole or in part is permitted for  
any purpose of the United States Government.

Abstract

Factors affecting the influence of social information on task satisfaction were studied in a laboratory setting. Specifically, the effects of a worker model's task competence and an observing worker's Field Dependence on the observer's adoption of the model's expressed task attitudes were examined with divergent predictions from Social Learning and Attribution research tested. Results showed the acceptance of social information to be an interactive function of model and observer characteristics. The task attitudes of Field Dependent subjects were influenced by the model's attitudes regardless of model competence. Among Field Independent subjects the Social Learning expectation of acceptance of the attitudes of competent models only was supported. Results are discussed in terms of differences in the processing of social information when job attitudes are formed.

Social Influences on Task Satisfaction:  
Model Competence and Observer Field  
Dependence

There currently exists a renewed interest in social influences on the formation of job attitudes (O'Reilly and Caldwell, 1979; Salancik and Pfeffer, 1977, 1978; Weiss and Shaw, 1979; White and Mitchell, 1979). Salancik and Pfeffer's "Social Information Processing" approach to job attitude formation represents the most extensive recent conceptual treatment of these influences. According to this approach, job attitudes develop in a complex information environment with expressed attitudes resulting from the integration of available attitude relevant information. Within this environment, socially provided cues about appropriate job attitudes and beliefs are important sources of such attitudinal information.

According to Salancik and Pfeffer, the social environment has both a direct and indirect effect on job attitudes. Indirectly, the social context can affect attitudes by making certain aspects of the environment more salient and by influencing the interpretation of situations and events. More directly, exposure to the expressed attitudes of co-workers about a job or its components can have a significant impact on a worker's own satisfaction. Salancik and Pfeffer argue that the complex, multidimensional nature of jobs produces uncertainty among workers about how to evaluate and react to them. Workers are, therefore, likely to be persuaded by the evaluations communicated by others.

Recent support for social influences on affective reactions to jobs is found in the laboratory studies of White and Mitchell (1979) and O'Reilly and Caldwell (1979). White and Mitchell manipulated social cues by having subjects work with a confederate who expressed

either positive or negative attitudes toward a task. Subjects who worked with the satisfied co-worker thought the task to be more satisfying than did subjects who worked with the dissatisfied co-worker. In a similar study, O'Reilly and Caldwell manipulated social cues by providing subjects with the written task evaluations of individuals who had previously worked on the task. Subjects provided with positive evaluations expressed significantly higher overall task satisfaction than did subjects exposed to negative evaluations. Further support is found in the field study of Buchanan (1974) where the organizational commitment of managers was shown to be significantly correlated with the attitudes toward the organization of the managers' work groups.

The use of an information processing framework to understand social influences on job satisfaction is similar to recent efforts among social psychologists interested in attitude change and development. Eagly and Himmelfarb (1978) report renewed attention to attitudinal issues among social psychologists and suggest that an important reason for this is a widely shared interest in information processing views of attitude change. In their paper they outline two broad issues of relevance to an information processing approach to attitudes: message attention and comprehension, and acceptance of received information. With regard to the issue of acceptance, Eagly and Himmelfarb note that received information does not influence attitudes unless the recipient "yields" to it. This issue of accepting or yielding to information involves the differential weighting of that information when making attitudinal judgments. Social psychological research over the years has shown that these weights are a function of message characteristics, communicator characteristics, recipient predispositions, communication context etc.



The social psychological research described by Eagly and Himmelfarb is primarily concerned with persuasion, where communicators are intentionally attempting to influence opinions and listeners are required to attend and react to the messages. However, the issues they describe are equally relevant to the social information processing involved in job attitude formation where persuasion is not necessarily the intent of the communication. Here individuals are gathering and integrating information relevant to making attitudinal judgments about their jobs. As such, the weighting of that information becomes an important issue.

The social information processing approach to job satisfaction argues that the expressed attitudes of co-workers are important pieces of information which are integrated with other information when job attitudes are formed. While the studies of White and Mitchell (1979) and O'Reilly and Caldwell (1979) have demonstrated the influence of social information on job satisfaction, no work yet exists on the factors which affect the acceptance or rejection of that social information. The purpose of this study was to examine, in a laboratory setting, factors which might influence the acceptance of, or weight given to social information when task attitudes are formed. Specifically, this study focused on the interactive effects of two factors on the adoption of a co-worker's expressed attitudes about a task by another worker: the co-worker's task performance or competence and the observing worker's Field Dependence or Independence.

The decision to focus on the co-worker's task performance was based upon two considerations. First, task performance or competence

is a salient co-worker attribute. New workers can usually easily determine which of their co-workers are effective performers. As such, if a communicator's task performance has an effect on his influence, the finding may be particularly relevant to social influences on attitudes in organizational settings. Second, an effect for co-worker task performance can be predicted from two different theoretical perspectives, Social Learning Theory and Attribution Theory. Yet, interestingly, these two theories make different predictions about the effect of a co-worker's ability to do the task on the acceptance by others of the validity of that co-workers attitudes. Therefore, focusing on this particular characteristic should provide additional information on the process by which social factors influence work attitudes.

#### Social Learning Theory

In this study subjects were exposed to either a high or low performing model who expressed either positive or negative attitudes toward the task. Subjects also worked on the task and their task satisfaction was assessed. In this situation the predictions from the Social Learning literature are clear; the attitudes of the competent, successful worker model are more likely to be adopted than the attitudes of the poor performing worker model. The high performing model should be more influential in both positive and negative attitude condition. Thus, with subjects' task satisfaction as the dependent variable, a significant model attitude by model performance interaction is expected. Subjects exposed to the high performing, positive model should express higher satisfaction than subjects exposed to the low performing positive model. Subjects exposed to the high performing negative model should express lower satisfaction than subjects exposed to the low performing negative model.

The prediction that models successful at the task will have greater influence is well supported by the Social Learning literature. Model characteristics have frequently been demonstrated to affect the extent of imitation (Flanders, 1968; Bandura, 1971), and specifically, the influence of model competence has been shown by Baron (1970) and Rosenbaum and Tucker (1962). More relevant to organizational behavior, Weiss (1977) has shown that the competence and success of supervisors is related to the extent to which they are imitated by subordinates.

Differences obviously exist between the behavior modeling examined in the Social Learning literature and the attitude modeling examined here. One major difference is that most social learning studies of competence and success have focused on the imitation of task specific behavior, where the competence of the model is likely to be an important cue allowing observers to judge the appropriateness of the model's approach to the task. The relevance of a model's task competence or success for judging the validity of his or her expressed attitudes is certainly less apparent. In fact, as will be discussed below, a model's success or competence may be seen as a factor biasing attitudes. Because of these differences the influence of a model's task performance on the adoption of his or her task attitudes may not necessarily follow the pattern suggested by the Social Learning literature. However, research has shown that model characteristics can influence imitation of a wide variety of seemingly unrelated behaviors. Lefkowitz, Blake and Mouton (1954), for example, showed that social status cues influence the extent of imitation of jaywalking behavior! It seems reasonable to suggest that demonstrated competence, or incompetence, in one area might generalize to observers' perceptions of the model's credibility

in other areas as well. Thus, an expected effect of model performance on the adoption of the model's attitudes is still supportable from the Social Learning literature.

### Attribution Theory

An interesting alternative conceptualization of the effect of communicator task performance on attitude modeling is provided by Attribution Theory. According to Kelly, (Kelly, 1972; 1973) individuals exposed to the expressed opinions of others engage in a causal analysis of the communicator's behavior. The result of this analysis influences whether the message is accepted or rejected. When a communicator expresses an opinion about an object or entity (such as a task or job) a number of potential reasons besides the actual properties of the object exist for the attitudinal statement. For example, the communicator may be under external constraints, he or she may have a constellation of personal attributes which account for the opinion, etc. If the attitude expression is attributed to properties of the object, the communicator will be seen as unbiased, the message will be seen as veridical and likely to be adopted. If factors other than the object itself are seen as causes for the attitude, the message will be seen as biased and will probably not be adopted. Kelly (1973) offered two principles which influence persuasion relevant attributional processes. According to the discounting principle "the role of a given cause in producing a given effect is discounted if other plausible causes are also present" (Kelly, 1973, p 113). According to the augmentation principle an opinion given in the presence of a factor which would normally tend to inhibit the expression of that attitude leads to nonsituational, entity attribution of cause.

Eagly (Eagly, Chaiken and Wood, in press; Eagly, Wood and Chaiken, 1978) has extended Kelly's attributional analysis of persuasion. She argues that individuals develop expectations about a communicator's opinion based upon contextual information and that these expectations influence subsequent causal attributions. Where the expectancy is confirmed, individuals are likely to attribute causality to those contextual factors which produced the original expectancy, discounting the validity of the opinion. Where the stated opinion is contrary to expectations the perceived validity of the opinion is augmented and the communicator is more influential. Supporting this position, Eagly, Wood and Chaiken, (1978) found that communicators of unexpected messages were perceived as less biased and were more influential than communicators of expected messages. Additional support for attributional processes in persuasion is provided by Knight and Weiss (Note 1). They compared the persuasiveness of communicators who had either benefited or suffered as a result of their beliefs. They argued that personal gain as an alternate cause of the communicator's opinion should lead to a discounting of the opinion's validity, while suffering, which would generally inhibit the expression of the belief, should augment perceptions of the opinion's validity. As predicted, Knight and Weiss found that suffering communicators were seen as more honest, less biased and less situationally controlled and were more influential than benefiting communicators.

Specific predictions about how workers will weigh the expressed attitudes of co-workers who differ in task performance can be derived from attribution theory and these predictions are at variance with those suggested by the Social Learning literature. It is reasonable to assume

that people generally believe that how workers perform on a task can significantly affect whether or not they like it. As a result, observers are likely to expect that co-workers will tend to dislike tasks they do poorly on and like tasks they do well on. When co-worker models express attitudes confirming expectations (high performing models stating positive attitudes, low performing models stating negative attitudes) task performance will be augmented as the probable cause for the attitude and the validity of the message will be discounted. When co-worker models express attitudes contrary to expectations (low performing models stating positive attitudes, high performing models stating negative attitudes) the validity of the message should be augmented and the model will be more influential.

Since the poor performing model should be more influential when expressing positive attitudes and the high performing model more influential when expressing negative attitudes, subjects exposed to poor performing models should express more positive task satisfaction than subjects exposed to high performing models in both positive and negative model attitude conditions. Thus, instead of the model attitude by model performance interaction predicted by the Social Learning literature, Attribution Theory predicts a main effect for model competence and no interaction.

#### Field Dependence

The discussion of acceptance of social information has so far focused on communicator characteristics. However, in making attitudinal judgments certain individual characteristics seem to be important influences on the weight given to social information as well. The field dependence or independence of observers seems to be particularly relevant to the modeling of task attitudes. Reviews by Witkin and

that people generally believe that how workers perform on a task can significantly affect whether or not they like it. As a result, observers are likely to expect that co-workers will tend to dislike tasks they do poorly on and like tasks they do well on. When co-worker models express attitudes confirming expectations (high performing models stating positive attitudes, low performing models stating negative attitudes) task performance will be augmented as the probable cause for the attitude and the validity of the message will be discounted. When co-worker models express attitudes contrary to expectations (low performing models stating positive attitudes, high performing models stating negative attitudes) the validity of the message should be augmented and the model will be more influential.

Since the poor performing model should be more influential when expressing positive attitudes and the high performing model more influential when expressing negative attitudes, subjects exposed to poor performing models should express more positive task satisfaction than subjects exposed to high performing models in both positive and negative model attitude conditions. Thus, instead of the model attitude by model performance interaction predicted by the Social Learning literature, Attribution Theory predicts a main effect for model competence and no interaction.

#### Field Dependence

The discussion of acceptance of social information has so far focused on communicator characteristics. However, in making attitudinal judgments certain individual characteristics seem to be important influences on the weight given to social information as well. The field dependence or independence of observers seems to be particularly relevant to the modeling of task attitudes. Reviews by Witkin and

Goodenough (1977) and Karp (1977) indicate that field dependent persons are more responsive to interpersonal factors and are more likely to seek and use information provided by relevant others when making judgments and defining their own attitudes. Weiss and Shaw (1979) studied the effects of social information on individuals' judgments of the motivating potential of tasks. They found that the influence of other workers' attitudes on task perceptions was significantly stronger among field dependent than field independent subjects.

As a result, in this study, it was expected that co-worker models would affect the attitudes of field dependent but not field independent subjects. That is, whether support is found for the attribution predictions or social learning predictions, that support should be found among field dependent subjects but not field independent subjects. Stated more specifically in terms of the design of this study, the social learning expectation would be a significant three-way interaction of model attitude, model performance and observer Field Dependence. In contrast, the Attribution expectation would be only a significant two-way interaction of model performance and observer Field Dependence.

To summarize, this study examined the influence of a model's expressed task attitudes on an observer's task attitudes as an interactive function of the model's task competence and the observer's Field Dependence. In so doing the divergent predictions of Attribution and Social Learning Theory were examined. Two studies are reported. A preliminary study tested the critical assumption of the attributional analysis that individuals expect high performers to express positive task attitudes and poor performers to express negative task attitudes.



The principal study examined the interactive effect of model competence and observer Field Dependence on the adoption of a model's expressed task attitude.

### Method

#### Overview

In the principal study subjects were told that they were taking part in research on training methods. They were to see a training film and then work on an assembly task. Personality measures were also being collected to allow analyses of individual reactions to various training procedures. In reality the "training film" was used to manipulate the attitudes and competence of the worker model. The film depicted two students, one working on the task (model) and one timing the task. While the experimenter gave detailed instructions of the task and of the activities of the "student worker", the casual conversation of the students could be heard in the background. Half of the subjects saw a film in which the student worker expressed a fairly positive attitude toward the task and the other half saw a film in which the student worker expressed a fairly negative attitude toward the task. In addition within each of the model attitude conditions, half of the subjects saw a model who performed well on the task and half saw a model who performed poorly on the task. After viewing the film, subjects worked on the same task shown in the training film and then completed a post task questionnaire assessing their task satisfaction.

In the preliminary study testing attitudinal expectations, subjects viewed a training film showing either a high or low performing model. No information about the model's attitudes was presented. After viewing the film, subjects were asked how much they thought the student worker liked the task.

### Subjects

One hundred and ninety five male undergraduates enrolled in the introductory psychology course at Purdue University served as subjects. Thirty five participated in the preliminary study and 160 participated in the principal study. Their participation was in partial fulfillment of class requirements.

### Preliminary Study

To test the assumption critical to the attributional analysis that observers expect high performers to express positive attitudes about the task and poor performers to express negative attitudes about the task, a preliminary study was conducted. Thirty five subjects were told they were participating in an investigation of the effectiveness of various types of training films. They would see a film and give their reactions. Specially edited versions of two of the training films prepared for, and ultimately used in, the main study (described later) were shown to these subjects. Sixteen subjects viewed one of the films depicting a high performing model while nineteen subjects were shown a similarly prepared version of one of the low performing model films. No attitudinal statements were included in these films. Only the model's hands were visible in these "training films", and therefore no verbal or nonverbal cues were available for observers to determine the model's attitude toward the task.

After viewing the film, subjects were asked to give their opinion about the films visual and auditory clarity, its usefulness as a training device etc. Subjects were also asked about the "worker's" competence at the task (7 point scale). Finally, to assess differences in subject's expectations about the model's attitudes toward the task,

subjects responded to three items asking whether they thought the worker in the film would describe the task as satisfying, enjoyable and interesting. An average of these three responses formed the Expected Model Attitude Scale.

After they had completed the questionnaire the subjects were debriefed and dismissed.

### Principal Study

Task - Subjects worked on a molecule assembly task frequently used in chemistry and biology courses. They were given a kit containing several types of color coded atoms and various types of bonds. They were also given a schematic diagram showing the correct molecular structure for three molecules. Subjects were told that they were to use the parts in the kit to construct the three molecules shown on the diagram. They were also told that their performance was being timed by the experimenter. So that they could not directly compare their performance to the model's they worked on different molecules than the ones shown in the training film.

Introductory Film - Before seeing the "training film" manipulating the model's attitudes and performance, all subjects were shown a two minute introductory film which briefly described the experimental task. The film was actually a videotape displayed on the monitor in each subject's room. In the film, the experimenter described the parts of the molecule assembly task and the schematic diagram. Subjects were also given a one page summary of the task which supplemented the content of the introductory film.

Training Film - After viewing the introductory film, a longer (10 minutes) videotape was displayed on each subject's monitor. Following

the method used by Weiss and Shaw (1979), subjects were led to believe that the film was made and being shown to them for training purposes. The film was actually designed to unobtrusively manipulate the worker model's task attitudes and task performance. The film was introduced as follows:

Now you will see the main training film. You will see two persons, like yourselves, one working on the task and one timing the task. These workers were filmed through a one-way mirror while they participated in an earlier part of this project. They did not know they were being filmed. You will hear these workers talk as they work on the task. Previous research on "on-the-job training" has shown that the casual comments of workers often provide significant instructional material that can be used by the observer. You will also hear the voice of an experimenter, which was dubbed in later, who will provide detailed instructions on how to do the task.

Four videotapes were made. In all tapes the worker and the timer were the same two graduate students. Two tapes were made with the worker expressing positive attitudes. In one positive attitude film the worker was able to successfully complete the task while in the other film his performance was unsuccessful and significantly poorer. Similar high and low model performance tapes were made with the worker model expressing negative attitudes.

Each tape began with the camera focused on the parts of the molecule task laying on a table. In the background could be heard the voice of the experimenter who was describing the task to the two student workers. After briefly introducing the task, the experimenter designated one student as the worker and one student as the timer. The worker (model) positioned himself at the table to begin working on the task in such a way that only his hands were on camera. The timer sat on a chair next to the table and was not shown. After the experimenter

left the room the model began working on the task while the timer periodically informed the worker of the speed of his performance.

In all four tapes, as the students worked, the experimenter's voice described the task in detail and used the model's performance to provide instructional information. This "training" material was dubbed in after the films were made and clearly sounded that way. A casual conversation between the worker model and the timer could also be heard in the background.

Model attitude was manipulated in the following manner. In the two positive model attitude tapes, at different points while working on the task, the worker expressed to the timer four positive overall comments about the task (e.g. "You know, I'm really enjoying this"). In the two negative attitude tapes, five negative overall statements about the task were made by the model (e.g. "This is really boring").

The performance of the model in the "training" films was conveyed as follows. While introducing the task the experimenter told the "student workers" that on the average previous participants in the research had been able to complete the three specific molecules they would work on in the time that had been allotted. As he worked on the task, the timer reported to the model how much time was left and when the time was up for each molecule. In the high performing model films the model proceeded with the task in a systematic and orderly fashion, completing all three molecules with time to spare. The timer acknowledged that the three molecules had been finished early. In the low performing model films, the model proceeded with the task in a haphazard fashion, making several errors which he had to correct. The timer repeatedly informed him of his slow progress,

and told him that he only completed one out of three of the molecules in the given time.

In all four tapes, the model's performance trends were made apparent before any attitudinal statements were expressed. That is, in the high performance films, the model had already finished the first molecule with time to spare and was easily completing the second molecule before he made his first attitudinal statement. In the low performance films, the model had just barely completed the first molecule and was clearly having trouble with the second before he expressed any attitude toward the task.

The high performance and low performance positive attitude tapes used the exact four attitudinal statements, placed at approximately the same points, to convey the model's positive task attitudes. Similarly, the high and low performance negative attitude tapes conveyed the model's attitude with the same five attitudinal statements. The casual conversation not relevant to the manipulations was equivalent for the four tapes. Thirty nine subjects viewed the positive competent models while 40 saw the positive incompetent model. Forty subjects viewed the negative competent worker while 41 observed the negative incompetent model.

Task Satisfaction - Subjects indicated their satisfaction with the molecule assembly task by responding to four seven-point Likert type items. The items asked subjects their beliefs about how satisfying the task was, how enjoyable it was, how interesting it was and how bored they were while working on the task. Responses to the four items were averaged to form the satisfaction index. Coefficient alpha reliability for the satisfaction scale was .85.

Field Dependence - As in Weiss and Shaw (1979) Field Dependence was measured using the short form of the Group Embedded Figures Test (Jackson, 1956). The short form consists of 12 patterns in which are "embedded" specific figures which the individual must find and trace within a 3 minute time limit. Jackson (1956) found that the correlation between the 12 item scale used in this study and the original 24 item scale (Witkin, Dyk, Faterson, Goodenough and Karp, 1962) correlated .96 for men and .97 for women. Karp states that the original 24 item GEFT has shown consistently high correlations with other measures of Field Dependence. Witkin et al. report a test re-test reliability for the GEFT of .89. For subjects in the current study the mean was 4.46, the median was 4.62 and the standard deviation was 2.22. Scores below the median were classified as Field Dependent.

Attributions - Subjects were asked to indicate the importance of the model's performance, situational pressures, and the task attributes as potential causes for the models expressed attitude. These were summed (with appropriate reflection) to form a situation (high score) versus entity (low score) attribution index.

Manipulation Checks - To check the effectiveness of the manipulations of model attitude and performance, subjects used 7 point scales to indicate how much the worker seemed to enjoy doing the task and how successful he was at the task.

Procedure - Each subject was seated in a small room containing a table, video monitor, and headset with microphone to communicate with the experimenter. On each table were manila envelopes containing the Embedded Figures test, the molecule task and diagrams, and a post task questionnaire. Subjects were told not to open any envelope until instructed by the experimenter.

Subjects were informed that they were participating in a study of the effects of visual and written training materials on assembly task performance. They would see a training film and then work on a similar assembly task. They were told that before seeing the film they would complete a personality inventory similar to those sometimes given to applicants for assembly jobs. This was being done to examine the effects of individual differences on worker responses to various training methods. At that point subjects completed the Group Embedded Figures Test.

Subjects were then shown the introductory film and were asked to follow along with a one page written summary of the film's content. After that they viewed the longer "training" film which served to manipulate model attitudes and performance.

When the training film ended, subjects were instructed to open the envelope containing the task and the diagram. They were told that their performance was being timed and that when they had assembled the three molecules they were to notify the experimenter.

Upon being notified by the subject that he was finished, the experimenter instructed the subject to complete the post task questionnaire. The post task questionnaire contained the satisfaction and attribution scales and the manipulation checks, embedded in a series of questions about the utility of the film as a training device and the clarity of the films and written task instructions. Upon completing the questionnaire subjects were thoroughly debriefed and dismissed.

This procedure resulted in a 2 (positive model attitude versus negative model attitude) x 2 (high performing model versus low performing model) x 2 (Field Dependent versus Field Independent) analysis of variance design.



## Results

### Expected Attitudes

Critical to the attribution prediction is the assumption that observers expect high performing individuals to express positive task attitudes and expect poor performers to express negative attitudes.

The results of the preliminary study clearly verified this assumption.

As required before further analysis, subjects who viewed the high performing model described him as significantly more successful at the task ( $\bar{x} = 6.62$ ) than did subjects who viewed the low performing model ( $\bar{x} = 3.00$ ) ( $t = 16.55$ ,  $p < .001$ ). More relevant to the issues of this preliminary study, a strong effect of model performance on expected model task satisfaction was found. Subjects who viewed the high performing worker expected that worker to express more positive attitudes about the task ( $\bar{x} = 5.33$ ) than did subjects who observed the poor performing worker ( $\bar{x} = 3.14$ ) ( $t = 5.44$ ,  $p < .001$ ,  $r_{ph} = .70$ ). Thus, the requirement for the attributional analysis that positive attitudes would be expected from high performing workers and negative attitudes from poor performing workers was strongly supported.

The remainder of this section presents the findings of the principal study investigating the interactive effects of model competence and observer Field Dependence.

### Manipulation Checks

Analyses of the manipulation checks confirmed the tapes effectiveness for conveying differences in the worker model's task attitudes. Subjects who saw the positive attitude model rated the model's task attitudes as significantly higher ( $\bar{x} = 6.38$ ) than did subjects who saw the negative attitude model ( $\bar{x} = 1.50$ ) ( $F = 1193.40$ ,  $p < .001$ ).

The tapes were equally effective in conveying differences in model performance. Subjects who saw the high performing model tapes rated the worker as significantly more successful at the task ( $\bar{x} = 5.73$ ) than did subjects who viewed the low performing model ( $\bar{x} = 2.79$ ) ( $F = 130.35$ ,  $p < .001$ ).

#### Task Satisfaction

As previously discussed, the Social Learning and Attributional analyses predict substantially different results for this study. Attribution research has shown that communicators are more influential when expressing unexpected opinions. The preliminary study demonstrated that observers expect high performing models to express positive task attitudes and low performing models to express negative task attitudes. Therefore, an attributional analysis predicts that in this study, poor performing models should be more influential than high performing models when expressing positive attitudes and high performing models more influential when expressing negative attitudes. As a result, subjects exposed to poor performing models should be more satisfied with the task than subjects exposed to high performing models in both model attitude conditions, producing a main effect for model performance. However, given the literature that Field Dependent persons are more responsive to interpersonal factors, an expected model performance x subject Field Dependence interaction was expected with the anticipated main effect of model performance occurring only for Field Dependent subjects.

It can immediately be seen (Table 1) that the Attributional position was not supported. Neither the main effect for model performance nor the performance x Field Dependence interaction was found.

-----  
Insert Table 1 about here  
-----

In contrast, the Social Learning literature predicts that the competent model will be more influential in both positive and negative attitude conditions. A significant model attitude x model performance interaction is therefore expected. Subjects exposed to a high performing positive model should express greater task satisfaction than subjects exposed to a poor performing positive model; subjects exposed to a high performing negative model should express lower task satisfaction than subjects exposed to a poor performing negative model.

Again, this expected pattern is complicated by the anticipated effect of Field Dependence. Specifically, the Social Learning interaction should be found only among Field Dependent subjects who are generally more responsive to social information. Among Field Independent subjects, no modeling effects are expected. Thus, a significant three-way interaction is predicted.

Results presented in Table 1 do indeed show a highly significant three-way interaction ( $F = 7.95, p < .005$ ). To examine whether this three-way interaction conforms to the expected pattern, separate analyses of variance were conducted for Field Dependent and Independent subjects. The results of these analyses are presented in Table 2 and relevant cell means are plotted in Figures 1 and 2.

-----  
Insert Table 2 and Figures 1 and 2 about here  
-----

An interesting, if somewhat unexpected, pattern of results emerges. It was originally anticipated that any three-way interaction would result from Field Dependent subjects responding to the social information and forming their task satisfaction based upon the interaction of model attitude and performance and Field Independent subjects generally ignoring the social information.

Contrary to expectations, the data clearly show that the social information influenced the attitudes of both Field Dependent and Independent subjects. However, the data also show that these subjects differed in the way they responded to that information. The main effect for model attitude found among Field Dependent subjects (Table 2) ( $F = 3.71$ ,  $p < .01$ ) indicates that, as expected, the task satisfaction of these subjects was significantly affected by the expressed attitudes of the worker model. However, the absence of a significant model attitude  $\times$  performance interaction or main effect for model performance also indicates that these subjects generally accepted the model's attitudes in a nondiscriminating manner, yielding to the social information independent of the characteristics of the communicator.

A different pattern emerges among the Field Independent subjects (Table 2). Rather than ignoring the social information, these subjects were also influenced by the model. However, the absence of a main effect for model attitude and the presence of a significant interaction between model attitude and performance ( $F = 6.06$ ,  $p < .05$ ) indicates that they were more selective in their responses to that information. Figure 2 shows the pattern of cell means for Field Independent subjects. The pattern indicates that it is for the Field Independent subjects, not the Field Dependent subjects that the Social Learning expectation of greater influence by successful models in both positive and negative attitude conditions is supported.

Post hoc tests of the differences between cell means using Fisher's LSD with a protected alpha level of  $p < .001$  (Winer, 1971) were used to examine the differential influence of high and low performing models in both attitude conditions for Field Independent subjects. Conforming to the Social Learning prediction, in the positive attitude condition subjects

viewing the high performing model expressed significantly higher task satisfaction than did subjects who viewed the low performing model ( $t = 4.08$ ,  $p < .001$ ). In the negative attitude condition, subjects viewing the high performing model had lower task satisfaction than did subjects who viewed the poor performer ( $t = 5.04$ ,  $p < .001$ ).

To summarize, the expressed attitudes of a worker model had a significant effect on the task satisfaction of observers. However, the extent of the model's influence was an interactive function of both model and observer characteristics. Field Dependent subjects were influenced by the model's attitudes regardless of the model's competence. The results for Field Independent subjects showed a more selective pattern of influence conforming to the expectations of the Social Learning literature. They accepted the social information only if it was communicated by a competent worker.

#### Attributions

Since the absence of support for the Attribution predictions may have been due to either an absence of an effect of expected versus unexpected communications on causal attributions or a failure, in this instance, of the attribution to influence message acceptance, it is important to know whether the communications had their anticipated effect on attributions. Table 3 shows the results of the analysis of variance examining the effects of model performance and attitude and observer Field Dependence on observer causal attributions. The presence of a significant interaction between model attitude and model competence ( $F = 6.73$ ,  $p < .01$ ) (see Table 4 for means) shows that the manipulations had their expected effect. Subjects exposed to expected communications (positive attitudes from high performers, negative attitudes from low performers) made more situational

attributions than subjects exposed to unexpected communications (positive attitudes from low performers, negative attitudes from high performers).

-----  
Insert Tables 3 and 4 about here  
-----

Interestingly, a significant three-way interaction on attributions was found ( $F = 4.00, p < .05$ ). Analysis of this interaction indicated that the effect of expected and unexpected communications on attributions was more pronounced among Field Independent observers. Yet, even though these subjects were better able to integrate the performance and attitude information when forming their attributions, these same subjects showed a pattern of task attitudes which conformed to the Social Learning rather than the attributional prediction.

#### Discussion

Recent conceptual and empirical work has been directed to the effects of social information on the development of job attitudes. The research reported here was an attempt to extend that work by examining certain factors which affect the acceptance of, or weight given to social information when task attitudes are formed. Specifically, this study looked at the interactive effects of a model's task performance and observer's Field Dependence on the observer's adoption of the model's expressed attitudes. In so doing, divergent predictions derived from Social Learning and Attribution research were tested.

The results showed that the influence of social information on task attitudes is a complex interactive function of model and observer characteristics. As in previous research, the expressed attitudes of the co-worker model had a significant effect on the eventual attitudes of observers. However, the extent of that effect was shown to be a function

of both model task performance or competence and observer Field Dependence. Only the attitudes of competent models were adopted by Field Independent observers. In contrast, Field Dependent observers were influenced by the model's attitudes regardless of whether the model performed well or poorly on the task.

While previous research supports the relevance of Field Dependence on the utilization of social information for task attitude formation (Weiss and Shaw, 1979; Witkin, 1978; Witkin and Goodenough, 1978) the specific pattern of results found in this study is somewhat surprising. Research on the relationship between Field Dependence/Independence and social behavior has generally characterized Field Dependent persons as more interpersonally oriented and more likely to take the views of others into account when forming their own opinions. Field Independent individuals, on the other hand, are generally characterized as less attentive to others' views and less likely to allow their own opinions to be influenced by others (Witkin, 1978; Witkin and Goodenough, 1978). The results of this study are compatible with the traditional characterization of Field Dependent persons but suggest that the characterization of those who are Field Independent may be an oversimplification.

As would be expected, the task attitudes of Field Dependent subjects were significantly influenced by the expressed attitudes of the model. In addition, for these subjects the model's competence did not matter. They were just as likely to adopt the attitudes of the low performing model as the attitudes of the high performing model. Unexpectedly, the results showed that Field Independent observers also responded to the model's attitudes, but unlike their Field Dependent counterparts, they were selectively influenced. They were willing to accept the attitudinal information of the competent model, but were quite unwilling to accept the

information of the incompetent model. These subjects took the source's characteristics into account when deciding whether to accept the validity of his opinion.

While the effect of social information on the responses of Field Independent subjects is somewhat surprising, the selectivity of their responses and their greater integration of the relevant information when making their judgments is not. From their review of the Field Dependence literature, Goldstein and Blackman (1978) conclude that Field Independents are superior to Field Dependents in their ability to discriminate among stimuli in the field and to synthesize information when making judgments. Similarly, Witkin (1978) states that Field Dependent individuals are more responsive to the dominant properties of the field. In this study, while both Field Dependent and Independent persons were well aware of the differences in the model's attitudes and performance, they differed in the extent to which their attitudinal judgments reflected the integration of all relevant information. The judgments of Field Dependent persons were influenced by the model's attitude alone. The judgments of Field Independent persons were influenced by a combination of the model attitude and model performance information.

In comparing the divergent predictions from the Attribution and Social Learning literatures, the results of this study indicated that when observers did take the model's competence into account, the effect of that characteristic was more in accord with Social Learning studies of imitation of models varying in competence than with expectations derived from Attribution Theory. According to Eagly et al. (in press), three broad information processing steps are described in an attributional analysis of persuasion. First, individuals use contextual information to develop premessage expectancies.



Second, individuals use the confirmation or disconfirmation of these expectancies to make causal inferences about the communicator's statements. Third, based upon these causal attributions, individuals decide on the degree of communicator bias which, in turn, directly determines the communicator's persuasiveness. It seems clear that this kind of causal analysis requires a good deal of information processing from subjects. Support for these attributional processes in social influence has come exclusively from persuasion studies where the subject's primary task is to attend to and consider the validity of the communicator's opinion. It may be that under such conditions research participants are more inclined to engage in the level of processing of socially provided information necessary for attributional effects than they were in this study. Recall that in this study subjects were requested to focus on the training material and had no expectations of ever meeting the model. As such, their involvement with the social information was probably low and undoubtedly less than that characteristic of persuasion studies. The demonstration of social influences under these conditions serves to attest to their importance.

Continuing this line of reasoning, one can argue that subjects can process social information at various levels. In this study, three levels can be delineated. At the shallowest level (besides ignoring all information), subjects respond to the model attitude information only. At the second level, subjects react to the performance information, but do so by conforming to the general belief that competent individuals are likely to have more accurate perceptions of the world than incompetent individuals. At the third level, subjects engage in the subtle judgments suggested by Attribution theory.

While the degree of subject involvement may have precluded the depth of processing necessary for attribution effects, it should be noted that the level at which individuals process social information will be a function of processing abilities and styles as well as effort. As suggested earlier, differences in integrative abilities may account for the interactive effect of model attitude and performance information which was found among Field Independent subjects. In other words, while both Field Independent and Dependent subjects may have had relatively low involvement, differences in ability may have resulted in Dependent subjects processing at the first level while Independent subjects processed at the more integrated second level. If this explanation has some validity, one might hypothesize that increasing the level of involvement by changing the experimental design might increase the processing of both groups, altering the results to where Field Dependent subjects conform to the Social Learning expectations and Field Independent subjects display a pattern of attitude modeling compatible with Attribution predictions.

Although this level of processing explanation is of course highly speculative, it deserves further attention as part of continued research, in the field as well as the laboratory, on the processes by which individuals assimilate social information when forming job attitudes. That individuals use the attitudes of other workers to help them shape their own responses is well established. However, new workers are likely to encounter multiple co-workers with a variety of relevant characteristics expressing a wide range of job attitudes. In addition, these same new workers will differ in their personalities, cognitive styles and incentives for processing social information.

How these workers weigh and integrate the body of social information they encounter is an important area of research for a social information processing approach to satisfaction. The results of this study clearly indicate that future research must take into account the interaction of observer and model characteristics when studying the way workers respond to the expressed attitudes of their co-workers.

Reference Note

Knight, P. A. and Weiss, H. M. "Benefits of Suffering: Communicator suffering, benefiting and influence," Unpublished manuscript.

## References

- Bandura, A. Social Learning Theory. Morristown, N.J.: General Learning Press, 1971.
- Baron, R. A. Attraction toward the model and model's competence as determinants of adult imitative behavior. Journal of Personality and Social Psychology, 1970, 14, 345-351.
- Buchanan, B., II. Building organizational commitment: The socialization of managers in work organizations. Administrative Science Quarterly, 1974, 19, 533-546.
- Eagly, A. H., Chaiken, S. and Wood, W. An attribution analysis of persuasion. In J. H. Harvey, W. J. Ickes and R. F. Kidd (Eds.), New Directions in Attribution Research. Vol. III, Hillsdale, N.J.: Erlbaum Associates, in press.
- Eagly, A. and Himmelfarb, S. Attitudes and opinions. Annual Review of Psychology, 1978, 29, 517-554.
- Eagly, A., Wood, W. and Chaiken, S. Causal inferences about communicators and their effect on opinion change. Journal of Personality and Social Psychology, 1978, 36, 424-435.
- Flanders, J. P. A review of research on imitative behavior. Psychological Bulletin, 1968, 69, 316-337.
- Goldstein, K. M. and Blackman, S. Cognitive style: Five approaches and relevant research. New York: John Wiley, 1978.
- Jackson, D. N. A short form of Witkin's embedded figures test. Journal of Abnormal and Social Psychology, 1956, 53, 254-255.
- Karp, S. A. Psychological differentiation. In T. Blass (Ed.) Personality Variables in Social Behavior, Hillsdale, N.J.: Lawrence Erlbaum and Associates, 1977.
- Kelley, H. H. Attribution in social interaction. In E. E. Jones et al. (Eds.), Attribution: Perceiving the causes of behavior. Morristown, N. J.: General Learning Press, 1972.
- Kelley, H. H. The processes of causal attribution. American Psychologist, 1973, 28, 107-128.
- Lefkowitz, M., Blake, R. R. and Mouton, J. S. Status factors in pedestrian violation of traffic signals. Journal of Abnormal and Social Psychology, 1955, 51, 704-705.

- O'Reilly, C. A. and Caldwell, D. F. Informational influence as a determinant of task characteristics and job satisfaction. Journal of Applied Psychology, 1979, 64, 157-165.
- Rosenbaum, M. E. and Tucker, I. F. The competence of the model and the learning of imitation and nonimitation. Journal of Experimental Psychology, 1962, 63, 183-190.
- Salancik, G. R. and Pfeffer, J. An examination of need-satisfaction models of job attitudes. Administrative Science Quarterly, 1977, 22, 427-456.
- Salancik, G. R. and Pfeffer, J. A social information processing approach to job attitudes and task design. Administrative Science Quarterly, 1978, 23, 224-252.
- Weiss, H. M. Subordinate imitation of supervisor behavior: The role of modeling in organizational socialization. Organizational Behavior and Human Performance, 1977, 19, 89-105.
- Weiss, H. M. and Shaw, J. B. Social influences on judgments about tasks. Organizational Behavior and Human Performance, 1979, 24, 126-140.
- White, S. E. and Mitchell, T. R. Job enrichment versus social cues: A comparison and competitive test. Journal of Applied Psychology, 1979, 64, 1-9.
- Winer, B. J. Statistical principles in experimental design. New York: McGraw-Hill, 1971.
- Witkin, H. A. Cognitive Styles in Personal and Cultural Adaptation. Worcester, Mass.: Clark University Press, 1978.
- Witkin, H. A. Dyk, R. B., Faterson, H. F., Goodenough, D. R. and Karp, S. A. Psychological Differentiation: Studies of Development. New York: John Wiley, 1962.
- Witkin, H. A. and Goodenough, D. R. Field dependence and interpersonal behavior. Psychological Bulletin, 1977, 84, 661-689.

Table 1  
Effects of Model's Attitude and Performance and Subject's  
Field Dependence on Subject's Task Satisfaction

Source	DF	MS	F
Model Attitude	1	141.88	7.14*
Model Performance	1	22.91	1.15
Field Dependence	1	28.02	1.41
Attitude x Performance	1	12.23	.62
Attitude x FD	1	47.44	2.39
Performance x FD	1	13.74	.69
Attitude x Performance x FD	1	158.01	7.95**
Residual	152	19.87	

\*\*p < .005

\*p < .01

Table 2

Effects of Model Attitude and Performance  
for Field Dependent and Field Independent Subjects

Source	DF	MS	F
Field Dependent			
Model Attitude	1	164.17	8.71**
Model Performance	1	31.76	1.69
Attitude x Performance	1	44.09	2.34
Residual	73	83.36	
Field Independent			
Model Attitude	1	14.73	.71
Model Performance	1	.40	.02
Attitude x Performance	1	126.16	5.06*
Residual	79		

\*\*p < .01

\*p < .05



Table 3  
Effects of Model's Attitude and Performance and Subject's  
Field Dependence on Attributions

Source	DF	MS	F
Model Attitude	1	52.05	4.31*
Model Performance	1	14.58	1.21
Field Dependence	1	.22	.02
Attitude x Performance	1	81.33	6.73**
Attitude x FD	1	1.58	.13
Performance x FD	1	3.67	.30
Attitude x Performance x FD	1	48.30	4.00*
Residual	152	12.08	

\*\*p < .01

\*p < .05

Table 4  
Attribution Cell Means

	Positive Model	Negative Model	Total
High Performing Model	4.84	4.32	4.57
Poor Performing Model	4.43	4.48	4.45
Total	4.53	4.40	4.51

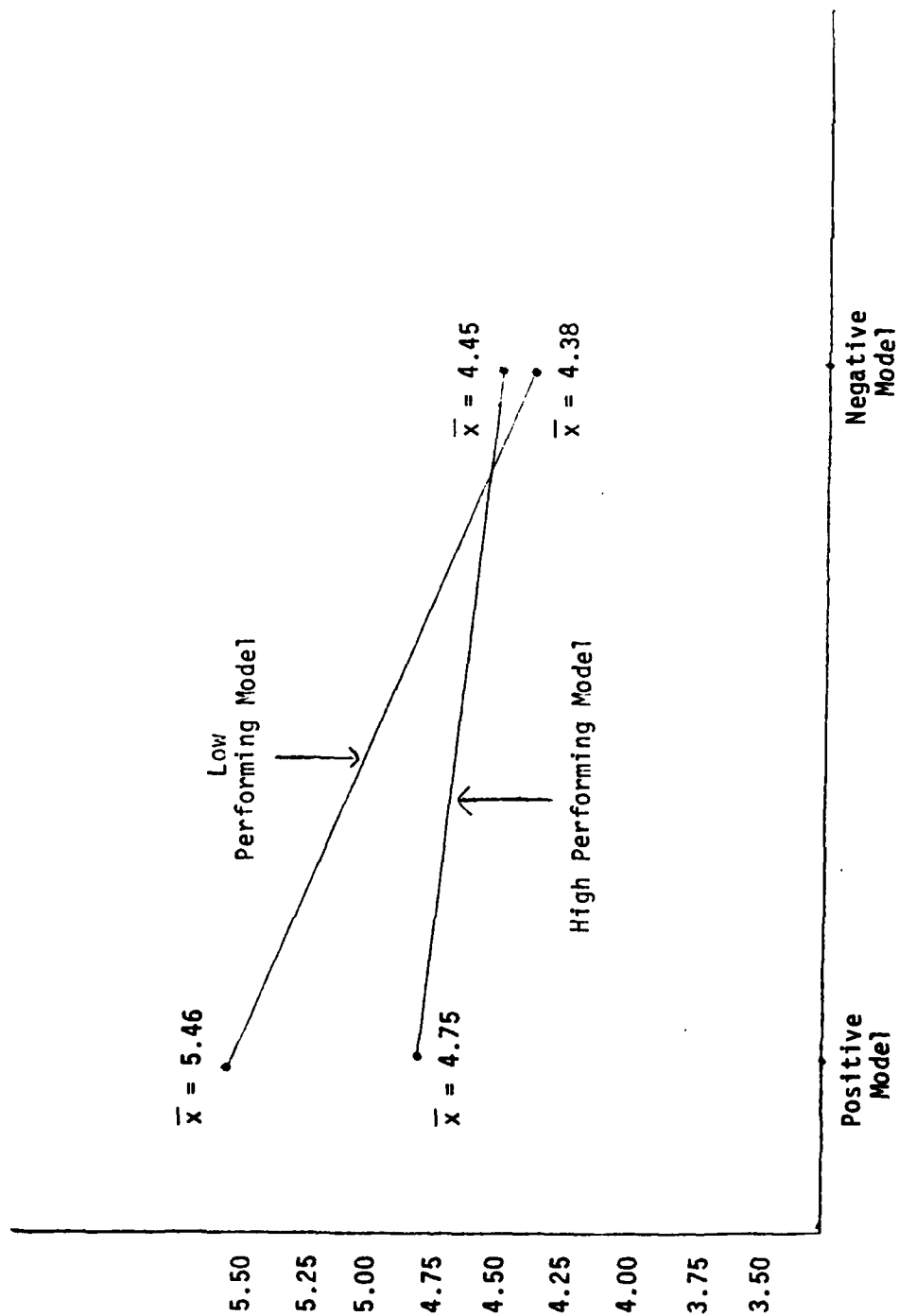


Figure 1 - Interaction of Model Attitude and Performance for Field Dependent Subjects

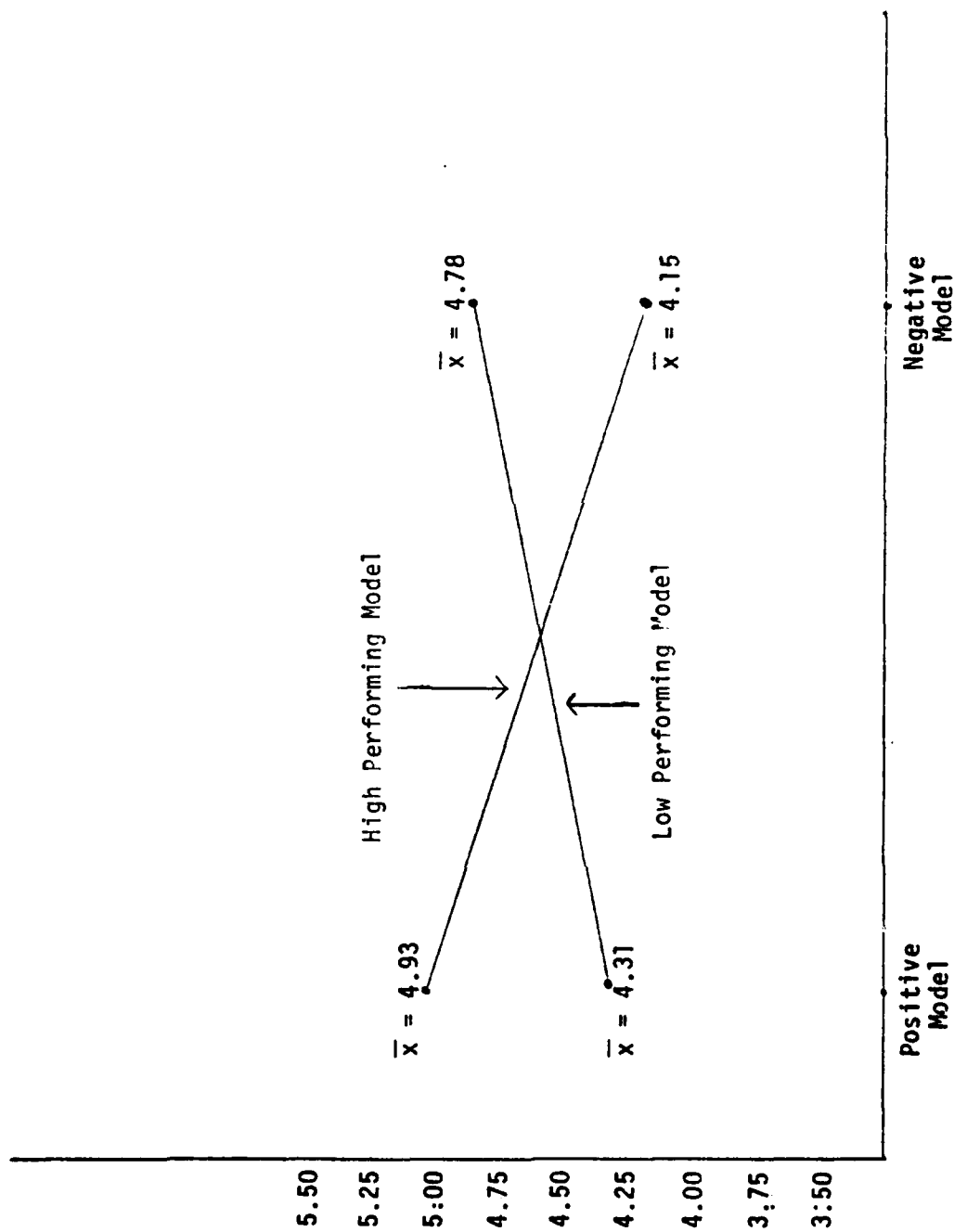


Fig. 2 - Interaction of Model Attitude and Performance for Field Independent Subjects

LIST 1  
MANDATORY

Defense Documentation Center (12 copies)  
ATTN: DDC-TC  
Accessions Division  
Cameron Station  
Alexandria, VA 22314

Library of Congress  
Science and Technology Division  
Washington, DC 20540

Chief of Naval Research (3 copies)  
Office of Naval Research  
Code 452  
800 N. Quincy Street  
Arlington, VA 22217

Commanding Officer (6 copies)  
Naval Research Laboratory  
Code 2627  
Washington, DC 20375

LIST 2  
OUR FIELD

Commanding Officer  
ONR Branch Office  
1030 E. Green Street  
Pasadena, CA 91106

Psychologist  
ONR Branch Office  
1030 E. Green Street  
Pasadena, CA 91106

Commanding Officer  
ONR Branch Office  
536 S. Clark Street  
Chicago, IL 60605

Psychologist  
ONR Branch Office  
536 S. Clark Street  
Chicago, IL 60605

Commanding Officer  
ONR Branch Office  
Bldg. 114, Section D  
666 Summer Street  
Boston, MA 02210

Psychologist  
ONR Branch Office  
Bldg. 114, Section D  
666 Summer Street  
Boston, MA 02210

Office of Naval Research  
Director, Technology Programs  
Code 200  
800 N. Quincy Street  
Arlington, VA 22217

LIST 3  
OPTIONAL

Deputy Chief of Naval Operations  
(Manpower, Personnel, and Training)  
Scientific Advisor to DCNO (Op-OIT)  
2706 Arlington Annex  
Washington, DC 20350

Deputy Chief of Naval Operations  
(Manpower, Personnel, and Training)  
Director, Human Resource Management  
Division (Op-15)  
Department of the Navy  
Washington, DC 20350

Deputy Chief of Naval Operations  
(Manpower, Personnel, and Training)  
Head, Research, Development, and  
Studies Branch (Op-102)  
1812 Arlington Annex  
Washington, DC 20350

Deputy Chief of Naval Operations  
(Manpower, Personnel, and Training)  
Director, Human Resource Management  
Plans and Policy Branch (Op-151)  
Department of the Navy  
Washington, DC 20350

LIST 3 (cont.)

Chief of Naval Operations  
Head, Manpower, Personnel, Training  
and Reserves Team (Op-964D)  
The Pentagon, 4A678  
Washington, DC 20350

Chief of Naval Operations  
Assistant, Personnel Logistics  
Planning (Op-987P10)  
The Pentagon, 5D772  
Washington, DC 20350

LIST 4  
NAVMAT & NPRDC

NAVMAT

Naval Material Command  
Program Administrator, Manpower,  
Personnel, and Training  
Code 08T244  
1044 Crystal Plaza #5  
Washington, DC 20360

Naval Material Command  
Management Training Center  
NMAT 09M32  
Jefferson Plaza, Bldg #2, Rm 150  
1421 Jefferson Davis Highway  
Arlington, VA 20360

NPRDC

Commanding Officer (5 copies)  
Naval Personnel R&D Center  
San Diego, CA 92152

Navy Personnel R&D Center  
Washington Liaison Office  
Building 200, 2N  
Washington Navy Yard  
Washington, DC 20374

LIST 5  
BUMED

Commanding Officer  
Naval Health Research Center  
San Diego, CA

Commanding Officer  
Naval Submarine Medical  
Research Laboratory  
Naval Submarine Base  
New London, Box 900  
Groton, CT 06340

Director, Medical Service Corps  
Bureau of Medicine and Surgery  
Code 23  
Department of the Navy  
Washington, DC 20372

Naval Aerospace Medical  
Research Lab  
Naval Air Station  
Pensacola, FL 32508

CDR Robert Kennedy  
Officer in Charge  
Naval Aerospace Medical  
Research Laboratory Detachment  
Box 2940, Michoud Station  
New Orleans, LA 70129

National Naval Medical Center  
Psychology Department  
Bethesda, MD 20014

Commanding Officer  
Navy Medical R&D Command  
Bethesda, MD 20014

LIST 6  
NAVAL POSTGRADUATE SCHOOL

Naval Postgraduate School  
ATTN: Dr. Richard S. Elster  
Department of Administrative Sciences  
Monterey, CA 93940

Superintendent  
Naval Postgraduate School  
Code 1424  
Monterey, CA 93940

Naval Postgraduate School  
ATTN: Professor John Senger  
Operations Research and  
Administrative Science  
Monterey, CA 93940

LIST 7  
HRM

Officer in Charge  
Human Resource Management Detachment  
Naval Air Station  
Alameda, CA 94591

Commander in Chief  
Human Resource Management Division  
U.S. Pacific Fleet  
Pearl Harbor, HI 96960

Officer in Charge  
Human Resource Management Detachment  
Naval Submarine Base New London  
P.O. Box 81  
Groton, CT 06340

Officer in Charge  
Human Resource Management Detachment  
Naval Base  
Charleston, SC 29408

Officer in Charge  
Human Resource Management Division  
Naval Air Station  
Mayport, FL 32228

Commanding Officer  
Human Resource Management School  
Naval Air Station Memphis  
Millington, TN 38054

Commanding Officer  
Human Resource Management Center  
Pearl Harbor, HI 96860

Human Resource Management School  
Naval Air Station Memphis (96)  
Millington, TN 38054

Commanding Officer  
Human Resource Management Center  
1300 Wilson Boulevard  
Arlington, VA 22209

Officer in Charge  
Human Resource Management Detachment  
Naval Air Station Ehidbey Island  
Oak Harbor, WA 98278

Commanding Officer  
Human Resource Management Center  
5621-23 Tidewater Drive  
Norfolk, VA 23511

Commanding Officer  
Human Resource Management Center  
Box 23  
FPO New York 09510

Commander in Chief  
Human Resource Management Division  
U.S. Atlantic Fleet  
Norfolk, VA 23511

Commander in Chief  
Human Resource Management Division  
U.S. Naval Force Europe  
FPO New York 09510

LIST 7 (cont.)

Officer in Charge  
Human Resource Management Detachment  
Box 60  
FPO San Francisco 96651

Officer in Charge  
Human Resource Management Detachment  
COMNAVFORJAPAN  
FPO Seattle 98762

LIST 8  
NAVY MISCELLANEOUS

Naval Amphibious School  
Director, Human Resource  
Training Department  
Naval Amphibious Base  
Little Creek  
Norfolk, VA 23521

Chief of Naval Education  
and Training (N-5)  
ACOS Research and Program  
Development  
Naval Air Station  
Pensacola, FL 32508

Naval Military Personnel Command (2 copies)  
HRM Department (NMPC-6)  
Washington, DC 20350

Navy Recruiting Command  
Head, Research and Analysis Branch  
Code 434, Room 8001  
801 North Randolph Street  
Arlington, VA 22203

Chief of Naval Technical Training  
ATTN: Dr. Norman Kerr, Code 0161  
NAS Memphis (75)  
Millington, TN 38054

Naval Training Analysis  
and Evaluation Group  
Orlando, FL 32813

Commanding Officer  
Naval Training Equipment Center  
Orlando, FL 32813

Naval War College  
Management Department  
Newport, RI 02940

LIST 9  
USMC

Commandant of the Marine Corps  
Headquarters, U.S. Marine Corps  
Code MPI-20  
Washington, DC 20380

Headquarters, U.S. Marine Corps  
ATTN: Dr. A. L. Slafkosky,  
Code RD-1  
Washington, DC 20380

LIST 11  
OTHER FEDERAL GOVERNMENT

National Institute of Education  
Educational Equity Grants Program  
1200 19th Street, N.W.  
Washington, DC 20208

National Institute of Education  
ATTN: Dr. Fritz Muhlhauser  
EOLC/SMO  
1200 19th Street, N.W.



LIST 11 (cont.)

National Institute of Mental Health  
Minority Group Mental Health Program  
Room 7 - 102  
5600 Fishers Lane  
Rockville, MD 20852

Office of Personnel Management  
Organizational Psychology Branch  
1900 E. Street, NW.  
Washington, DC 20415

Chief, Psychological Research Branch  
ATTN: Mr. Richard Lanterman  
U.S. Coast Guard (G-P-1/2/62)  
Washington, DC 20590

Social and Developmental Psychology  
Program  
National Science Foundation  
Washington, DC 20550

LIST 12  
ARMY

Army Research Institute  
Field Unit - Monterey  
P.O. Box 5787  
Monterey, CA 93940

Deputy Chief of Staff for  
Personnel, Research Office  
ATTN: DAPE-PBR  
Washington, DC 20310

Headquarters, FORSCOM  
ATTN: AFPR-HR  
Ft. McPherson, Ga 30330

Army Research Institute  
Field Unit - Leavenworth  
P. O. Box 3122  
Fort Leavenworth, KS 66027

Technical Director (2 copies)  
Army Research Institute  
5001 Eisenhower Avenue  
Alexandria, VA 22333

LIST 13  
AIR FORCE

Air University Library/LSE 76-443  
Maxwell AFB, AL 36112

AFOSR/NL (Dr. Fregly)  
Building 410  
Bolling AFB  
Washington, DC 20332

Air Force Institute of Technology  
AFIT/LSGR (Lt. Col. Umstot)  
Wright-Patterson AFB  
Dayton, OH 45433

Technical Director  
AFHRL/ORS  
Brooks AFB  
San Antonio, TX 78235

AFMPC/DPMYP  
(Research and Measurement Division)  
Randolph AFB  
Universal City, TX 78148

LIST 15  
CURRENT CONTRACTORS

Dr. Clayton P. Alderfer  
School of Organization  
and Management  
Yale University  
New Haven, CT 06520

Dr. H. Russell Bernard  
Department of Sociology  
and Anthropology  
West Virginia University  
Morgantown, WV 26506

Dr. Arthur Blaiwes  
Human Factors Laboratory, Code N-71  
Naval Training Equipment Center  
Orlando, FL 32813

Dr. Michael Borus  
Ohio State University  
Columbus, OH 43210

Dr. Larry Cummings  
University of Wisconsin-Madison  
Graduate School of Business  
Center for the Study of  
Organizational Performance  
1155 Observatory Drive  
Madison, WI 53706

Dr. John P. French, Jr.  
University of Michigan  
Institute for Social Research  
P.O. Box 1248  
Ann Arbor, MI 48106

Dr. Paul S. Goodman  
Graduate School of Industrial  
Administration  
Carnegie-Mellon University  
Pittsburgh, PA 15213

Dr. J. Richard Hackman  
School of Organization  
and Management  
Yale University  
56 Hillhouse Avenue  
New Haven, CT 06520

Dr. Joseph V. Brady  
The Johns Hopkins University  
School of Medicine  
Division of Behavioral Biology  
Baltimore, MD 21205

Mr. Frank Clark  
ADTECH/Advanced Technology, Inc.  
7923 Jones Branch Drive, Suite 500  
McLean, VA 22102

Dr. Stuart W. Cook  
University of Colorado  
Institute of Behavioral Science  
Boulder, CO 80309

Mr. Gerald M. Croan  
Westinghouse National Issues  
Center  
Suite 1111  
2341 Jefferson Davis Highway  
Arlington, VA 22202

Dr. Asa G. Hilliard, Jr.  
The Urban Institute for  
Human Services, Inc.  
P. O. Box 15068  
San Francisco, CA 94115

Dr. Charles L. Hulin  
Department of Psychology  
University of Illinois  
Champaign, IL 61820

Dr. Edna J. Hunter  
United States International  
University  
School of Human Behavior  
P.O. Box 26110  
San Diego, CA 92126

Dr. Rudi Klauss  
Syracuse University  
Public Administration Department  
Maxwell School  
Syracuse, NY 13210

LIST 15 (cont.)

Dr. Judi Komaki  
Georgia Institute of Technology  
Engineering Experiment Station  
Atlanta, GA 30332

Dr. Edward E. Lawler  
Battelle Human Affairs  
Research Centers  
P.O. Box 5395  
4000 N.E., 41st Street  
Seattle, WA 98105

Dr. Edwin A. Locke  
University of Maryland  
College of Business and Management  
and Department of Psychology  
College Park, MD 20742

Dr. Ben Morgan  
Performance Assessment  
Laboratory  
Old Dominion University  
Norfolk, VA 23508

Dr. Richard T. Mowday  
Graduate School of Management  
and Business  
University of Oregon  
Eugene, OR 97403

Dr. Hoseph Olmstead  
Human Resources Research  
Organization  
300 North Washington Street  
Alexandria, VA 22314

Dr. Thomas M. Ostrom  
The Ohio State University  
Department of Psychology  
116E Stadium  
404C West 17th Avenue  
Columbus, OH 43210

Dr. Arthur Stone  
State University of New York  
at Stony Brook  
Department of Psychology  
Stony Brook, NY 11794

Dr. Philip G. Zimbardo  
Stanford University  
Department of Psychology  
Stanford, CA 94305

Dr. George E. Rowland  
Temple University, The Merit Center  
Ritter Annex, 9th Floor  
College of Education  
Philadelphia, PA 19122

Dr. Irwin G. Sarason  
University of Washington  
Department of Psychology  
Seattle, WA 98195

Dr. Benjamin Schneider  
Michigan State University  
East Lansing, MI 48824

Dr. Saul B. Sells  
Texas Christian University  
Institute of Behavioral Research  
Drawer C  
Fort Worth, TX 76129

Dr. H. Wallace Sinaiko  
Program Director, Manpower Research  
and Advisory Services  
Smithsonian Institution  
801 N. Pitt Street, Suite 120  
Alexandria, VA 22314

Dr. Richard Steers  
Graduate School of Management  
and Business  
University of Oregon  
Eugene, OR 97403

Dr. James R. Terborg  
University of Houston  
Department of Psychology  
Houston, TX 77004

Drs. P. Thorndyke and M. Weiner  
The Rand Corporation  
1700 Main Street  
Santa Monica, CA 90406

Dr. Howard M. Weiss  
Purdue University  
Department of Psychological  
Sciences  
West Lafayette, IN 47907